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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/809,995

03/26/2004

Mi-Sook Nam

10125/4138

8489

7590 12/20/2007
Brinks Hofer Gilson & Lione
Post Office Box 10395
Chicago, IL 60610

EXAMINER

DUDEK, JAMES A

ART UNIT	PAPER NUMBER
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2871

MAIL DATE	DELIVERY MODE
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12/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/809,995

Applicant(s)

NAM ET AL.

Examiner

James A. Dudek

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-26,28-30,36 and 38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 18-26,28-30,36 and 38 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

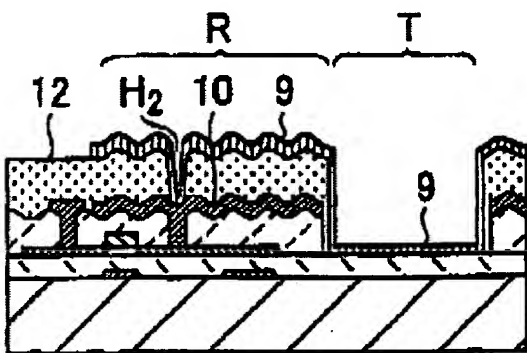
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 18-26, 28-30, 36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6809785 B2 (785) in view of US 6885418 B2 (418).

FIG.2B



Per claim 18, 785 teaches a fabricating method of an array substrate for a transfective liquid crystal display device, comprising: forming a gate line [see G] and a data line on a substrate [D], the gate line and the data line crossing each other to define a pixel region having

reflective and transmissive portions; forming a thin film transistor connected to the gate line and the data line; forming a first passivation layer on the thin film transistor [5], the first passivation layer having a plurality of protrusions in the reflective portion [see figure above], wherein the plurality of protrusions are formed by patterning the first passivation layer [see column 3, process step D], and wherein a top surface of the first passivation layer between the plurality of protrusions is substantially even [see photomask shown in figure 8]; forming an uneven reflective layer on the first passivation layer in the reflective portion that has unevenness at least in part due to the plurality of protrusions [10]; and forming a pixel electrode on the first passivation layer [9]; providing a second substrate having a color filter layer [see column 3, 3rd full paragraph]; and common electrode on the surface of the overcoat layer [see column 3, 3rd full paragraph]; and disposing the first substrate such that reflective and transmissive portions of the first substrate oppose the corresponding regions of the second substrate [inherent].

785 lacks each color filter of the color filter layer having regions corresponding in dimension and arrangement to the reflective and transmissive portion of a pixel region and having at least one through hole in the reflective portion, the second substrate further comprising: an overcoat layer on the color filter layer, a surface of the overcoat layer having a recess portion in the transmissive region. However, 418 teaches each color filter of the color filter layer having regions corresponding in dimension and arrangement to the reflective and transmissive portion of a pixel region and having at least one through hole in the reflective portion, the second substrate further comprising: an overcoat layer on the color filter layer, a surface of the overcoat layer having a recess portion in the transmissive region. 418 teaches such an arrangement for visibility. Accordingly, it would have been obvious to one of ordinary skill at the time of invention to combine the color filters of 418 with the display 785.

Per claims 19 and 24, 785 teaches the method according to claim 18, further comprising forming a second passivation layer on the reflective layer and the pixel electrode on the second passivation layer [see silicon oxide layer 12 above].

Per claim 20, 785 teaches the method according to claim 18, further comprising forming the reflective layer on the pixel electrode [see figure 4].

Per claim 21, 785 teaches the method according to claim 18, wherein the reflective layer includes one of aluminum and aluminum alloy [see column 2, second full paragraph].

Per claim 22, 785 teaches the method according to claim 18, but lacks the step of forming an insulating layer of an inorganic material between the first passivation layer and the reflective layer. However, it was well known to form inorganic layers between the liquid crystal layer and the TFT in order to protect the TFT. Accordingly, it would have been obvious to one of ordinary skill at the time of invention to combine the well known inorganic insulating layer with 785.

Per claim 26, 785 teaches the method according to claim 19, further comprising forming a contact hole through the first and second passivation layers and connecting the pixel electrode to the thin film transistor through the contact hole [see contact holes in the above figure].

Per claim 28, 785 teaches the method according to claim 18, further comprising substantially maintaining a thickness of the first passivation layer between the transmissive portion and a section of the reflective portion in which the transistor is absent [see figure above].

Per claims 23 and 25, 785 teaches the method according to claim 18, but lacks the first and second passivation layer includes one of benzocyclobutene and acrylic resin. However, it was well known to use acrylic resin as a flattening layer for its improve transparency. Accordingly, it would have been obvious to one of ordinary skill at the time of invention.

Per claim 29-30, 785 teaches the method according to claim 18, but lacks forming the first passivation layer in the transmissive portion such that no protrusions are formed in the transmissive portion. However it was well known to form a flattening layer in the transmissive region in order to decrease noise. Accordingly, it would have been obvious to one of ordinary skill at the time of invention.

Per claims 36 and 38, 785 lacks an explicit teach that the LC thickness in the reflecting region is twice that of the of the transmissive region. However, since light travels through the reflecting region twice it was well known. Accordingly, it would have been obvious to one of ordinary skill at the time of invention.

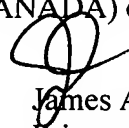
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Art Unit: 2871

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Dudek whose telephone number is 571-272-2290. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



James A. Dudek
Primary Examiner
Art Unit 2871